STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

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Michigan Frog and Toad Survey
2007 Data Summary

There were 906 unique sites surveyed in Zone 1, 237 in Zone 2, 90 in Zone 3, and 80 in Zone 4, for a total of 1313 sites. This is a slight decrease from the number of sites statewide surveyed last year. A few of the species (i.e. Fowler's toad, Blanchard's cricket frog, and mink frog) have ranges that include only a portion of the state. As was done in previous years, only data from those sites within the native range of those species were used in analyses.

A calling index of abundance of 0, 1, 2, or 3 (less abundant to more abundant) is assigned for each species at each site. Calling indices were averaged for a particular species for each zone (Tables 1-4). This will vary widely and cannot be considered a good estimate of abundance. Calling varies greatly with weather conditions. Calling indices will also vary between observers. Results from the evaluation of methods and data quality showed that volunteers were very reliable in their abilities to identify species by their calls, but there was variability in abundance estimation (Genet and Sargent 2003). Calling Indices of abundance will be reported as in past summaries but not used to actually estimate abundance of species.

Once again, the spring peeper was the most frequently heard species and heard in most counties. Mink frog observations slightly increased from last year, but data on this species is highly dependent on the amount of data submitted and the timing of the observations. The low number of observations of mink frogs in Zones 3 and 4 is still a concern. There are still thoughts among the scientific community that mink frogs are actually declining in Michigan (J. Harding, pers. comm.). Pickerel frog occurrence remains low, possibly a result of confusion between this species' calls and that of the Northern leopard frog. Pickerel frog occurrences have been known to be lower than the leopard frog in other Great Lakes states. Northern leopard frog observations are slightly higher than last year. Occurrences of the Cope's gray treefrog continue to be low, relative to the Eastern gray treefrog. Occurrences declined once observations were required to be validated. Data for the Cope's gray treefrog and the Blanchard's cricket frog have to be confirmed either by recording or validation by an "expert", however many submitted observations are not validated and cannot be counted. As observers gain experience through the years, differentiations between similar-sounding species should become clearer.

Data on wood frog observations should be interpreted cautiously due to their brief calling periods and associated difficulty of conducting the first run when wood frogs are calling. Green frogs seem to be on the verge of a decline in all zones, but may be making a comeback. The continued low abundance of Fowler's toads is becoming more troublesome and hopes are that this documentation will lead to future research projects to investigate the reason(s) for decline. Using all the routes that submitted data in 2007 the percentage of sites at which a species was heard per route was calculated for each zone (Tables 1-4).

A statewide, 12-year analysis was done this year. The average number of sites per route at which a species was heard for all the routes was charted by year for each species. Trends were calculated for each species using the number of sites per route rather than changes in this factor as in the past. Negative trend numbers indicate a decline and vice versa. For most species the trends are similar between zones. Most species' trends appear to be stable (Table 5). The reasons for these trends are unknown at this time. It is apparent, from statistical confidences (not presented in this report), that the number of years of data is still inadequate to accurately assess populations of frogs and toads in Michigan.

Table 5. Trends of Michigan Frogs & Toads 1996-2007

SPECIES	MEAN (no. sites/route)	TREND
WOODFR	3.6	3.3
WESTCF	4.4	4.9
SPRIPE	8.6	9.1
NORTLF	1.3	1.3
PICKFR	0.1	0.1
AMERTO	4.1	4.3
GRAYTR	6.8	7.7
FOWLTO	0.2	0.6
COPEGT	0.1	0.3
BLANCF	0.1	0.1
MINKFR	0.2	-0.2
GREFRO	5.8	6.2
BULLFR	1.1	1.5

All updated data summaries, phenologies, range maps and other information on the Michigan Frog and Toad Survey are featured on the DNR web site: http://www.michigan.gov/dnr/. Click on "Wildlife and Habitat" then "Research Projects" then "Frog and Toad Survey".

All questions concerning these data summaries and/or the Michigan Frog and Toad Survey should be directed to:

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Literature Cited

Genet, K and L.G. Sargent. 2003. Evaluation of methods and data quality from a volunteer-based amphibian call survey. Wildlife Society Bulletin 31 (3): 703-714

Table 1. 2007 SUMMARY OF FROG AND TOAD SURVEY
Zone 1 - 906 sites

	Fowler's Toad n=360ƒ	Wood Frog n=906	W. Chorus Frog n=906	Spring Peeper n=906	Northern Leopard Frog n=906	Pickerel Frog n=906	American Toad n=906	Gray Treefrog n=906	**Cope's Gray Treefrog n=906	**Blanchard's Cricket Frog n=796ƒ	Mink Frog n=0ƒ	Green Frog n=906	Bullfrog n=906
Mean*	1.00	1.99	1.69	2.25	1.38	1.00	1.61	1.97	1.67	2.18	----	1.40	1.26
No. Sites	1	310	462	782	192	4	423	643	2	9	----	543	178
% Sites	0.3	34.2	51.0	86.3	21.2	0.4	46.7	71.0	0.2	1.1	----	59.9	19.6

***** Mean calling index of sites where species were heard

ƒ n is the number of sites within that species range - calculations include sites in native range of species only

** Confirmed observations

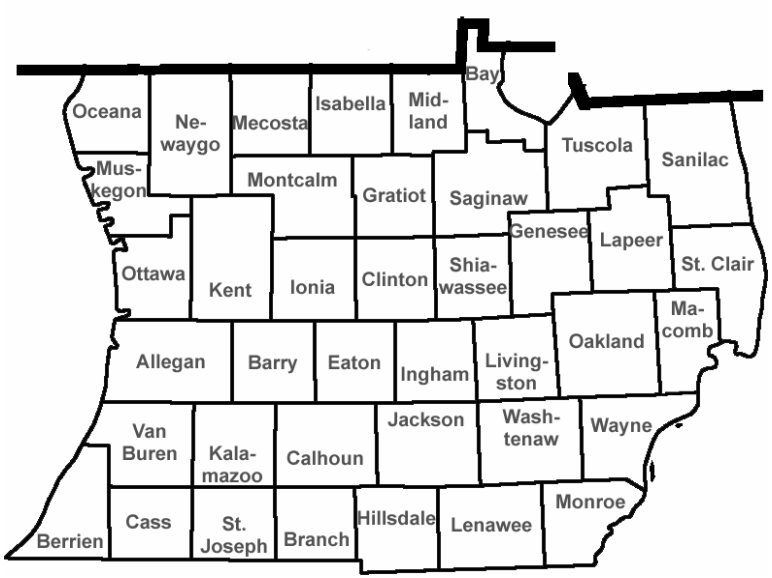

Table 2. 2007 SUMMARY OF FROG AND TOAD SURVEY
Zone 2 - 237 sites

	Fowler's Toad n=147ƒ	Wood Frog n=237	W. Chorus Frog n=237	Spring Peeper n=237	Northern Leopard Frog n=237	Pickerel Frog n=237	American Toad n=237	Gray Treefrog n=237	**Cope's Gray Treefrog n=237	Blanchard's Cricket Frog n=0ƒ	Mink Frog n=0ƒ	Green Frog n=237	Bullfrog n=237
Mean*	2.89	1.59	1.74	2.37	1.42	0	1.60	1.76	0	0	----	1.33	1.00
No. Sites	9	93	76	200	38	0	85	106	0	0	----	124	1
% Sites	6.1	39.2	32.1	84.4	16.0	0	35.9	44.7	0	0	----	52.3	0.4

***** Mean calling index of sites where species were heard

ƒ n is the number of sites within that species range - calculations include sites in native range of species only

** Confirmed observations

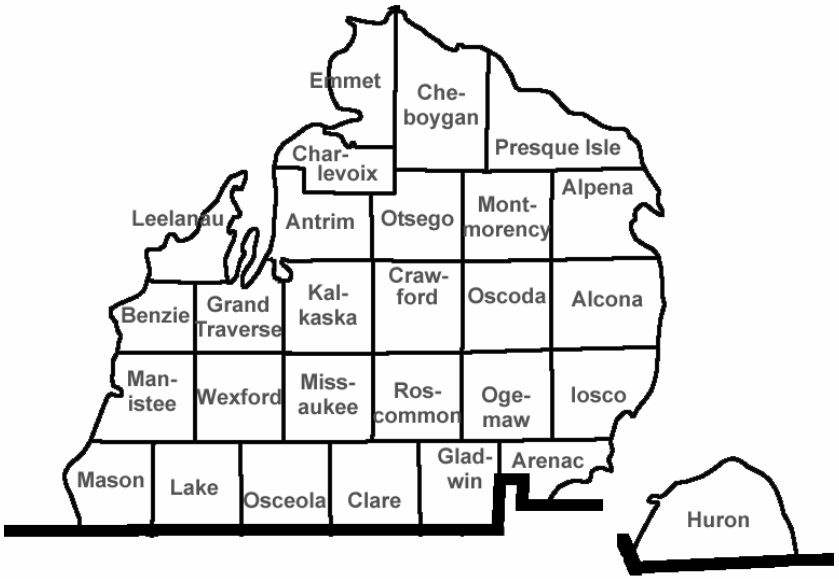

Table 3. 2007 SUMMARY OF FROG AND TOAD SURVEY
Zone 3 -90 sites

	Fowler's Toad n=0ƒ	Wood Frog n=90	W. Chorus Frog n=90	Spring Peeper n=90	Northern Leopard Frog n=90	Pickerel Frog n=90	American Toad n=90	Gray Treefrog n=90	**Cope's Gray Treefrog n=90	Blanchard's Cricket Frog n=0ƒ	Mink Frog n=90ƒ	Green Frog n=90	Bullfrog n=90
Mean*	------	1.51	1.34	2.31	1.00	2.00	1.42	1.73	0	-------	1.18	1.65	1.0
No. Sites	------	41	20	82	7	1	44	38	0	-------	9	49	1
% Sites	------	45.6	22.2	91.1	7.8	1.1	48.9	42.2	0	-------	10.0	54.4	1.1

Mean calling index of sites where species were heard

ƒ n is the number of sites within that species range - calculations include sites in native range of species only

** Confirmed observations

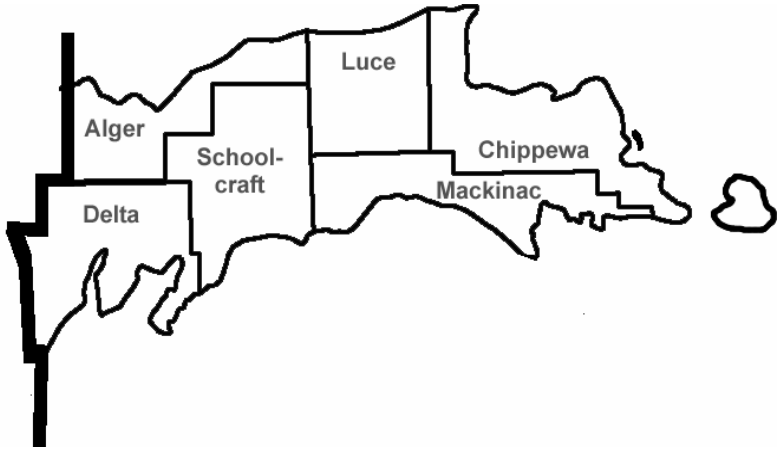

Table 4. 2007 SUMMARY OF FROG AND TOAD SURVEY
Zone 4 -80 sites

	Fowler's Toad n=0ƒ	Wood Frog n=80	W. Chorus Frog n=80	Spring Peeper n=80	Northern Leopard Frog n=80	Pickerel Frog n=80	American Toad n=80	Gray Treefrog n=80	**Cope's Gray Treefrog n=80	Blanchard's Cricket Frog n=0ƒ	Mink Frog n=80ƒ	Green Frog n=80	Bullfrog n=80
Mean*	------	2.14	1.05	2.56	1.00	0	2.14	1.90	0	-------	0	1.26	0
No. Sites	------	35	17	70	4	0	32	40	0	-------	0	31	0
% Sites	------	43.8	21.2	87.5	5.0	0	40.0	50.0	0	-------	0	38.8	0

***** Mean calling index of sites where species were heard

ƒ n is the number of sites within that species range - calculations include sites in native range of species only

** Confirmed observations